TOP SECRET

This document contains information referring to Project OXCART

OXC-3790-62
Copy 7 of 7
3 August 1962

MEMORANDUM FOR THE RECORD

SUBJECT: Trip Report - Visit to ACIC, St. Louis, Missouri

REFERENCE: Memorandum for the Record/OXCART Charts/ OXC-3742-62, dated 20 July 1962

1. As a consequence of discussions held with [redacted] 25X1

25X1 [redacted] on 26 July 1962 a staff visit was made to

25X1 ACIC. [redacted] having been briefed on the OXCART Project and presented the navigation problem, felt a visit to ACIC was in order. Major

25X1 [redacted] accompanied by [redacted] 25X1

visited ACIC on 31 July and 1 August 1962.

2. An agenda was arranged by [redacted] (see Attachment "A") for the visitors. Its schedule was adhered to with minor deviations and with some overrun on each day's time allotment. 25X1

3. Following is a brief resume of the various briefings and walk-through visits that transpired during the two days:

25X1 (a) [redacted] advised on arrival that the visit was ostensibly one of a study group under AFCIN-1 sponsorship. He stated that certain portions of the briefings were not germane to the problem, but that sandwiched in were certain items and individuals he felt could contribute ultimately to solving the OXCART navigation problem.

(b) Missions and Products: A general briefing was rendered

25X1 by [redacted] on the mission and capabilities of the ACIC facility. He explained the processes of chart requirements, development, evaluation, acceptance (or rejection), production, and distribution.

132

25X1

2012

DATE: 10 Feb 82 [redacted]

TOP SECRET

(c) Technical Planning: [redacted] of the Technical Planning Division described ACIC-AFSC-Contractor relations during the development of a weapons system for the USAF. The ACIC assigns an individual as a project officer to work directly with the contractor and the command (s) involved with a weapons system development. Hopefully navigation aid and support proceeds apace with vehicle development in order that a compatible navigation device is in place when delivery is made to the operating unit. Examples of items produced in support of recent weapons systems were: 25X1

(1) Experimental NAVARHO navigation charts based on the AP series;

(2) A plastic hemisphere [redacted] worked on this) utilizing pinpoint light to show the aircraft's position and heading on a display screen. This proposal was in anticipation of B-70 requirements. 25X1

(3) Satellite charts were exhibited, and a set was given to the visitors.

(d) Requirements Division: [redacted] gave a briefing on the functions of the ACIC Requirements Division. In addition, [redacted] gave the step-by-step procedure whereby a new map, chart, or device comes into being: 25X1 25X1

Requesting Command --- USAF --- ACIC --- Project Officer --- Liaison --- Test and Evaluation --- Approval --- Production.

25X1 [redacted] advised that the Tactical Situation Display (TSD) system employed in the F-106 took five to six months for production of the first model. He also explained the mission of the Air Standardization Coordinating Committee. ACIC represents the U. S. Government in the Committee's activities which are standardizations of navigational aids on a global basis.

25X1 [redacted] Project Officer for the B-58, discussed the B-58 flight simulator and the transverse grid system. He also stated that a GNC (1:5m) had been printed with with B-58 overlay (similar to the overprinting of the JN series), for use by B-58 crews. It met resistance from SAC's B-58 pilots and navigators, and this approach to charting was terminated. The B-58 employs the over-printed B-58 JN series of charts.

25X1 [redacted] Project Officer for the TSD used in the F-106, explained the TSD system to the visitors. Photos of the system are attached (Attachment B and B_2). [redacted] 25X1 showed two mechanical systems of knee-pad chart holders for navigation in flight. Neither proved practical due to difficulties in handling. [redacted] 25X1 will bring the devices to Washington for the proposed 8 August meeting. ACIC developed a gnomonic computer with which, given two points, the individual can obtain true heading and distance between the two points. A development model was loaned to the visitors. It was learned that two hundred copies are to be built by a contractor.

The visitors were also shown the first example of a JNC (Scale 1:3m) covering the continental United States. Four plates covering the Artic polar region have been in production for several months. The JNC just developed (JNCX-5A (1) N) is being sent to SAC at the end of August for test and evaluation. Production of the 1:3m scale chart will probably not come until Fiscal Year 1964. It appeared to the visitors that the 1:3m scale lent itself to the requirements of the OXCART Program.

The visitors were also shown the chart developed for NASA's Mercury Project. The Mercury Orbit Chart (MOC) is designed to provide orientation to the astronaut during orbit and is the only chart carried by him. A copy of the chart, in the form carried on a flight, was procured from ACIC and is available in OSA/Intelligence Staff files. Attached is a copy of MOC-4 (Attachment C). Note: NASA prohibits dissemination of the MOC charts, and the attached copy should not be removed from the OSA area.

(e) The second day's schedule commenced with a briefing by [redacted] The project covered ACIC's exploitation of sensitive photographic materials. It was primarily a historical resume of ACIC activities from 1955 to the present year. It was gratifying to see how sensitive materials, most of which were acquired by OSA, are being used in the mapping and charting areas. 25X1

A walk-through briefing was conducted through the Missile Support Division by its chief, [redacted] Various advanced and sophisticated equipment was demonstrated. 25X1

(f) The balance of the visit was devoted to examination of various devices, proposals, graphics, charts, etc., which could be adopted for use in the OXCART Program. Among these were:

25X1 (1) A Pictorial Situation Indicator (PSI) developed by [redacted] for use in the F-108 aircraft. The PSI used 35mm slides to present chart information on a 5 inch screen.

(2) A Horizontal Tactical Indicator, similar to the PSI above. Neither device has been adopted by the USAF.

(3) Various maps and charts for wall presentation were also exhibited. Most of the charts are in the inventory of ACIC and were known to the visitors. It was learned at this time that the Aerospace Chart (ASC) series was being expanded to cover all the continents. Interim editions of ASC-2, 3, 4, and 5 will be available at the end of August. It is felt that ASC-2, along with the ASC-1 (currently being used in [redacted] project) will be suitable for OXCART briefing purposes. The production schedule for the 1:3m JNC referred to above was also obtained. Copies will be obtained for use in the field. 25X1

(4) A proposal for tape recorders as a substitute for graphics was also advanced.

25X1

4. In conclusion, it can be said that the cooperation and hospitality extended by [redacted] and the personnel at ACIC was outstanding. ACIC is eager and willing to develop navigation aids for any weapons system.

5. After review of all navigation aids, both in use and proposed, it is felt that the following avenues should be explored:

(a) A 35mm viewer type method of map display should be developed as primary in-flight navigation aid.

(b) A flight plan recorder should be developed which could serve as an alternate in-flight navigation aid, backed up by graphics.

(c) Field, contractor, and INS people should be asked to test the various graphics in being to determine which is most feasible for cockpit use.

(d) A method of carrying graphics should be developed which will provide easy access to the pilot and yet be easily destroyed.

SIGNED

[redacted]

25X1

Intelligence Staff/OSA

Attachments:
A -- Agenda
B -- Photos of TSD System
B$_2$ - Photos of TSD System
C -- Mercury Orbit Chart

MISSING PAGE

ORIGINAL DOCUMENT MISSING PAGE(S):

Attachment missing